

Funding Mechanism Inventory and Evaluation

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Funding Mechanism Inventory and Evaluation

Purpose

This document supports information contained in Chapter 4 of the *California Water Plan Update 2018*. The purpose of this document is to provide a description of the current and novel funding mechanisms, as well as assumptions used in the funding analysis (described in *Funding Scenario Analysis* supporting document). The *Funding Mechanism Inventory and Evaluation* supporting document evaluates the current and novel funding mechanisms available to implement water resources management actions.

Funding mechanisms need to be appropriate for the management actions being funded (i.e., have a nexus and applicability), be available when needed (i.e., have inter-annual reliability), and have political support (i.e., political viability). Many potential funding mechanisms are available for financing water resources management from State, local, federal, or private sources. Any of these could be applied for different capital and ongoing management actions. This document discusses a range of funding mechanisms and their potential use for capital or ongoing management actions. For capital management actions, the mechanisms include (1) existing, authorized funding streams, such as the State general fund or local taxes and assessments, and (2) limited-duration capital finance mechanisms, such as general obligation (GO) bonds or local bonds. Ongoing management actions are best supported by consistent reliable funding from mechanisms such as general fund, taxes, rates, or assessments.

The characteristics of each funding mechanism are detailed in this document and are important considerations for the funding analysis in Chapter 4 of the *California Water Plan Update 2018*. Novel mechanisms are included in the funding analysis for demonstration and are not a substitute for the studies and legislation required for creation of these mechanisms. Local and federal mechanisms also are included to provide an understanding of historical and future cost sharing potentials. For additional information on historical expenditure levels of State, local, and federal funding mechanisms, see *Historical Expenditures and Current and Future Funding Needs* supporting document.

Organization

This document is organized to provide information about State, local, and federal funding mechanisms:

- Funding Mechanism Attributes
- Funding Mechanisms Considered in the *California Water Plan Update 2018*
 - State Mechanisms (Existing and Novel)
 - Local Mechanisms
 - Federal Mechanisms

Funding Mechanism Attributes

To develop an implementable and sustainable investment strategy, financing mechanisms need to be appropriate for the management actions being funded (i.e., have a nexus and applicability), be available when needed (i.e., have inter-annual reliability), and have political support (i.e., political viability). Without these attributes, an investment strategy will have difficulty gaining support. These attributes are described in the following sections.

Nexus and Applicability

Nexus, in terms of funding mechanisms, refers to the connection between the benefits received and the costs allocated to the beneficiary. If a nexus cannot be established, the funding mechanism may not be appropriate for the activity being proposed. Many of the funding mechanisms that use property assessments have strict guidelines regarding the nexus between allocated costs and the resulting assessment. For example, water rates must be based on the benefit received (e.g., amount of water used) and the cost to produce this benefit (e.g., cost to deliver, treat, and purchase water). Also, fees and some general obligation bonds have stipulated uses (e.g., Environmental Protection Trust fund serves as a depository for fees and penalties collected from owners or operators of above-ground petroleum storage tanks for specified purposes related to spills or releases).

Inter-Annual Reliability

Sustainable, long-term funding provides managers at the State, local, and federal levels with better ability to achieve desired outcomes. Many water resources management actions require annual ongoing expenditures, such as operation, maintenance, data gathering, institutional capacity, and emergency management. Given the magnitude of the capital expenditures required for water resources management, a funding approach that lasts for multiple decades will be required. Therefore, the *California Water Plan Update 2018* funding analysis considers a combination of recurring financing and less frequent one-time mechanisms such as GO bonds.

Political Viability

Some funding mechanisms require the support of voters, the State Legislature, or policymakers. For example, the implementation of some existing funding mechanisms requires a vote, such as implementing assessments, taxes, or the approval of a GO bond. Also, some proposed novel funding mechanisms will require new legislation to be established. The political viability of these novel funding mechanisms must be considered, as voters and policy makers may have opposed them in the past. However, as the need for investment in water management continues to expand due to insufficient funding, a reevaluation of these proposed mechanisms is prudent.

Funding Mechanisms Considered in the California Water Plan Update 2018

Central to the *California Water Plan Update 2018* funding analysis is characterizing the State's role in water resources management and making recommendations of actions to help achieve California's intended outcomes. As part of this effort, a funding analysis was performed to outline how to pay for the recommended actions, listed in Chapter 3 of the *California Water Plan Update 2018*. The analysis included reviewing how existing State funding mechanisms (such as State General Fund and State GO

Bonds) can be used to fund the recommended actions. In addition, the analysis reviewed how novel mechanism could be employed to help fund California water resources management. The novel mechanisms would supplement, not replace, current funding mechanisms. Simply replacing current mechanisms with novel mechanisms would result in insufficient funding to implement the recommended actions. The funding analysis also incorporated local and federal funding mechanisms, to provide a comprehensive funding approach. This is important as the State does not fund water resources management alone. In fact, local agencies fund a majority of water resources management in California; as shown in *Historical Expenditures and Current and Future Funding Needs* supporting document. The comprehensive approach to funding is consistent with the shared values and principles presented in Table 4-1 of the *California Water Plan Update 2018*. Table 1 outlines the funding mechanisms considered in the *California Water Plan Update 2018*.

Table 1 Funding Mechanisms Considered in the *California Water Plan Update 2018*

Entity	Funding Mechanism
State	State General Fund
	State GO Bonds
	Special Designated Funds
Novel Mechanisms	Watershed or River Basin Assessment
	Water Surcharge Fee
	Risk Reduction Insurance
	Water Markets
	Enhanced Infrastructure Finance Districts
	Greenhouse Gases (GHG) Cap-and-Trade Program Fund
	Public Private Partnerships (P3)
	User Fees
Local	Local Assessments, Fees, Taxes, and Rates
Federal	Federal Agency operation, maintenance, and capital budgets
	Grants and Loan Programs

Existing State Funding Mechanisms

State funding of water resources management activities is predominately from the State General Fund, State GO Bonds, and Special Designated Funds (including user assessments, fees, and taxes). These funding mechanisms have been used to finance water resources management and environmental programs, some of which provide grants for local agencies to perform management actions. Table 2 provides an overview of the State funding mechanisms discussed in this section. Table 3 provides information regarding annual average expenditures and revenue sources for existing State funding mechanisms. The following sections will provide an overview of State funding mechanisms based on the funding mechanisms attributes.

Table 2 Summary of Current State Funding Mechanisms

Funding Mechanism	Description
Current Mechanisms	
State General Fund	The State General Fund is supported by state income taxes, sales taxes, corporate taxes, and other revenue sources. There are few restrictions on the use of the State General Fund. The State General Fund can be used for capital, operation and maintenance (O&M), and ongoing actions. Increases in General Fund expenditures for infrastructure investments are more feasible during periods of economic growth.
General Obligation (GO) Bond	State GO bonds are loans backed by the “full faith and credit” of California. Issuance of State GO bonds requires a statewide vote. Time is required to prepare language for the bond measure for the statewide vote, as well as a time lag between approval and issuance of funds. GO bonds may have additional requirements on the types of management actions applicable to receive funding. The State must pay back the principal (amount borrowed), bond issuance cost, and interest on the borrowed amount. Fiscal year 2016/2017 interest on debt for water-related State GO bonds is more than \$678 million annually.
Designated Special Funds	Designated special funds have regulatory guidance (from the California Constitution or state statutes) on revenue generation and applicable uses of the expenditures. For example, the California Environmental License Plate Fund has a designated revenue source (personalized or certain special interest license plate fees) and expenditures can support only specific actions. <i>Historical Expenditures and Current and Future Funding Needs</i> supporting document describes water-related designated special funds.

Table 3 Overview of State Funding Mechanisms

Funding Mechanism	Expenditures	Historical Annual Average (\$ millions)	Historical Annual Maximum (\$ millions)	Revenue Sources
State General Fund	State Agencies including the Department of Water Resources, State Water Resources Control Board, CalEPA, California Department of Fish and Wildlife	\$254	\$405	State Income Tax, Corporate Tax, Sales tax, Fees, Permits
State General Obligation Bonds	State Agencies	\$1,603	\$2,289	State General Fund
Designated Special Funds	Designated Programs	\$4,980	\$7,122	State fees, assessments, taxes, and other revenue sources with a designated purpose

Note: For historical State GO bond expenditures see *Historical Expenditures and Current and Future Funding Needs* supporting document.

General Fund

The California general fund is used for the daily and long-term administration and operation of the State government. The general fund is supported by revenues collected on a regular basis (primarily income tax, corporate tax, and sales taxes) with few restrictions on the use of those funds. The general fund can be used for capital and ongoing actions (including operation and maintenance), requiring either appropriation from the State Legislature, or approval of a Governor's directive by the Legislature. Expenditures from the State general fund for water resources management compete with other statewide priorities, including police, education, fire, healthcare, and other emergency services and other emerging issues.

Nexus and Applicability

State general fund expenditures for water resources management have a nexus with issues or priorities of statewide interest or that provide public benefits (such as regulation, subsidies, or provision of public goods). Applicability varies across agencies and individual water sectors. For example, the California Department of Water Resources (DWR) Division of Flood Management (DFM) has strong applicability with the flood management sector but low applicability for water supply reliability sector. Alternatively, the State Water Resources Control Board has high applicability to water supply reliability sector and low applicability to the flood management sector. In general, State general fund expenditures have a good nexus and applicability for capital and ongoing management actions.

Inter-Annual Reliability

The State general fund has high inter-annual reliability for State agency budgets and moderate inter-annual reliability for local assistance or grants programs supported by the State general fund. Overall, inter-annual reliability of State general fund expenditures on water resources management is dependent on the budget process of the current legislature and Governor. Baseline levels of funding for each State agency and ongoing management actions has high inter-annual reliability. Local assistance, grants programs, and capital management actions range from moderate to low inter-annual reliability.

Political Viability

Increasing the utilization of the State general fund requires the political will of the State Legislature to appropriate additional funding towards water resources management. Appropriations, for water resources management, could be through increased State agency budgets (where the agency has a water resources nexus), the local assistance programs or grants programs. To do so, the support of voters, state representatives, state agency staff, or the administration is necessary, and may require lobbying, letters of support, or other actions by local governments or individual citizens.

Role in a Water Resources Management Funding Plan

Each State agency supported by the State general fund that has a role in water resources management in California is fulfilling a mission statement, complying with State water code, or other guiding legislation. In the *California Water Plan Update 2018* funding analysis scenarios, the level of contribution from State general fund varies across scenarios. *Funding Scenario Analysis* supporting document provides State general fund expenditures in the different funding scenarios. In the scenarios, expenditures from the State general fund were projected to increase to assist in implementing existing underfunded mandates and implement recommended actions.

General Obligation Bonds

State GO bonds are an important funding mechanism for water resources management in California. State GO bonds are ideal for large capital management actions that pay-as-you-go financing may be unable to support. State GO bonds are a loan, backed by the State of California. The language of a State GO bond may take years to draft and passage requires statewide voter approval. After voter approval, issuance of funds may take years depending on requirements contained in the bond language, fluctuations in the bond market, as well as obtaining necessary approvals from the California Department of Finance (DOF) and the State legislature. State GO bonds can be used to support management actions in all water sectors as long as there is a nexus to benefits outlined in the voter approved proposition.

Nexus and Applicability

State GO bonds for water resources management have a nexus and applicability to benefits and actions outlined in the voter approved proposition. In general, State GO bonds have a good nexus and applicability for capital management actions. Although some GO bonds have supported ongoing actions (such as planning, mapping, and data management), in general there is a low nexus and applicability for ongoing management actions because bonds are not a reliable source of continuing funding.

Inter-Annual Reliability

State GO bonds have low inter-annual reliability because the funds are for specific purposes and at a specific expenditure level, usually expended over a limited timeframe. As such, they are not typically used to fund ongoing annual expenditures. Approval for a State GO bond requires that the proposition is approved by a majority of voters statewide, in addition to the DOF and the Governor. Over the last couple of decades, GO bonds supporting water resources management have passed and been issued on a regular basis. However, there has been variability on the types of actions funded. The interannual reliability for GO bonds is variable because it requires political and voter support on a bond by bond basis. In the future, passage of GO bonds could be impacted by concerns regarding the cost of repaying interest. Historical water-related State GO bond expenditures are provided in *Historical Expenditures and Current and Future Funding Needs* supporting document.

Political Viability

The political viability of State GO bonds is dependent on the passage of a statewide proposition by a majority of Californian voters. The development of water-related State GO bonds includes input from State agency staff, administration, lobbyists, interest groups, and the State legislature. Individual citizens contribute by participating in voter information campaigns and voting for or against a bond proposition. Support or opposition to a GO bond is often influenced by a voter information campaign. Typically, propositions are not put on the ballot unless proponents believe the likelihood of passage is high. This has caused some GO bond propositions to be delayed until the political climate is more favorable.

Role in a Water Management Funding Plan

State GO bonds are central to investing in water resources capital management actions but have less applicability to some ongoing actions (e.g., operations and maintenance). In the *California Water Plan Update 2018* funding analysis scenarios, the level of contribution from State General Obligation bonds varies across scenarios. For State General Obligation bond expenditures in the different funding scenarios, see *Funding Scenario Analysis* supporting document.

Designated Special Funds

Designated special funds have regulatory requirements (from the California Constitution or state statutes) that guide revenue generation and applicable uses of the expenditures. Water-related designated special funds include those associated with the State Water Project, environmental protection, and water or air pollution. These designated special funds have specified revenue sources (such as hydropower sales, user or polluter fees, and taxes) that can only be used for purposes defined in legislation. Some designated special funds have a competitive process to award funding for implementation of management actions via loans or grants, while others have a prescribed purpose. The *Historical Expenditures and Current and Future Funding Needs* supporting document describes the water-related designated special funds evaluated in the California Water Plan Update 2018.

Nexus and Applicability

Designated special funds have a strong nexus and applicability with the management actions defined applicable in the guiding statute or California constitution but, a moderate nexus across all management actions. The creation of these funds can address a need by generating revenue for a specific management action that lacks an applicable mechanism or inadequate capacity. In addition, the defined revenue generation mechanism for a designated special fund must have a nexus with recipient the management action.

Inter-Annual Reliability

Designated special funds have high inter-annual reliability due to a dedicated mechanism for revenue generation and have clearly defined applicable management actions. Certain management actions can have a higher inter-annual reliability if there is less competition for the applicable designated special fund and the revenue generated occurs on an annual basis.

Political Viability

A change to the revenue generation capacity or applicable uses of designated special funds may require a change to a state statute or the California constitution. Creation of a new designated special fund may require political effort to get it through the lawmaking process by voters or the legislature. If the designated special fund is administered by an agency that has discretion on the use of funds, then it may be viable to change the applicability towards specific management actions. However, any changes would need to comply with the statutory requirements or regulation.

Role in a Water Resources Management Funding Plan

Each designated special fund has a specifically mandated role in water resources management in California that complies with State water code, or other guiding legislation. In the *California Water Plan Update 2018* funding analysis scenarios, the level of contribution from designated special fund has been set at historical average level for all scenarios. *Funding Scenario Analysis* supporting document provides designated special funds expenditures in the different funding scenarios.

Novel State Funding Mechanisms

Novel funding mechanisms are either new funding mechanisms or existing mechanisms that have not been traditionally implemented by State agencies. In the *California Water Plan Update 2018* novel mechanisms are used to provide alternatives to traditional water resources management funding mechanisms in California. Some novel funding mechanisms included in the funding analysis are already used (public-private partnerships) by local or federal agencies. Other funding mechanisms have not been implemented in the past and will need to be investigated prior to implementation (such as a watershed or river basin assessment or water surcharge). The motivation for including novel funding mechanisms is to:

- Provide dedicated funding for water resources management
- Increase ongoing revenue generation capacity
- Improve nexus for specific actions
- Expedite funding

The novel mechanisms, included in Table 4, are for demonstration purposes only and are not to be interpreted as an endorsement or proposal of these funding mechanisms. The application of novel funding mechanisms would require additional studies on impacts and legislation prior to implementation.

Role of Novel Funding Mechanisms in a Water Management Funding Plan

The *California Water Plan Update 2018* includes novel funding mechanisms in some scenarios of the funding analysis. The use of novel funding mechanisms in the scenarios is conceptual. No individual novel funding mechanism is assumed responsible for the hypothetical annual contribution. The funding scenarios that include novel funding mechanisms assume the annual contribution is generated from a combination of novel funding mechanisms. In funding scenarios that use novel funding mechanisms, the level of contribution is not based on an estimated revenue generation capacity, ability to pay, or willingness to pay. The annual contribution is based on the identified need and are included to display how novel funding mechanisms interact with traditional funding mechanisms.

Table 4 Summary of Novel Funding Mechanisms

Funding Mechanism	Description
Novel Mechanisms	
Watershed or River Basin Assessment	A watershed or river basin assessment could be used to fund management actions in all water sectors. The watershed or river basin assessments would be assessed statewide with funding returned to watershed or river basins to support implementation of management actions previously identified in a regional sustainability plan.
Water Surcharge Fee	A water use surcharge on retail water sales could be used to generate revenue for water supply reliability or multi-benefit management actions. The fee could support management actions including integrated water resource management. Revenue generated by a water use surcharge would require actions funded to demonstrate a nexus to the fee.
Risk Reduction Insurance	Risk reduction insurance could be used to support funding of management actions to reduce risks from flooding, droughts, climate change, and unreliable water supplies. Implementation would involve the State partnering with private insurers and underwriters to effectively develop a State insurance program that would either replace or augment existing insurance policies. The insurance program would be structured to allow the State to use a portion of the insurance premiums on implementing management actions to reduce risk and the remaining amount to purchase private catastrophic insurance.

Funding Mechanism	Description
Novel Mechanisms	
Water Markets	Water markets allow willing buyers and sellers to shift the use of water through exchanges, one-time purchases, short-term leases, long-term leases, or permanent sale of water rights or contract quantities. Revenue could be generated from water markets by assessing a fee or per unit charge for each transfer, which could be used to implement management actions.
Enhanced Infrastructure Financing Districts (EIFD)	Legislation to establish Enhanced Infrastructure Finance Districts (EIFDs) was passed in 2014. This legislation enables the establishment of one or more EIFDs within a county to assist with financing construction or rehabilitation of a wide variety of public infrastructure and private facilities. The use of the assessments within these districts will vary based on how the EIFD is established.
Greenhouse Gases (GHG) Cap-and-Trade Program Fund	A market based program to reduce GHG emissions using a cap and trade program that includes an annually declining limit on GHG emissions. The State sets an annual cap on total emissions and auctions off emission allowances to GHG emitters, who may subsequently buy or sell allowances among themselves. For the auction proceeds to be used to fund water resources management actions, the action must show a nexus in reducing GHG emissions.
Public Private Partnerships	Public-private partnerships (P3s) are long-term contractual agreements between a private party and a government entity. The private party provides funding for a public asset or service, that is back by the revenue generated from the asset or service. The private party bears significant risk and/or management responsibility, in exchange for interest payments on the original funding.
User Fees	A fee based on the principal of either a beneficiary paying for a service or good, or a polluter paying for costs associated with damages to the environment. Examples include State Water Resources Control Board Drinking Water, Water Quality, and Water Rights fees; local development fees; and water rates. A user fee requires legislation that stipulates the types of benefits that can be assessed actions permitted under the fee.

Watershed or River Basin Assessment

A watershed or river basin assessment is a funding mechanism capable of supporting all water sectors as well as both ongoing and capital management actions. Watershed or river basin assessments could be used to fund sustainability plans and regional coordination/collaboration within a watershed or river basin. Watershed or river basin planning is a multidisciplinary approach to managing water resources and their users at a river basin scale (Pegram et al., 2013). Watershed or river basin planning is based on the fundamental principles of equity, environmental protection, efficient development, balance, and cooperation. Planning at a watershed or river basin scale is necessary to meet social, economic, and environmental priorities that are specific to each area and to avoid a piecemeal approach. This approach seeks to reconcile these apparently competing priorities and provide a comprehensive approach to planning.

Key attributes of a watershed or river basin planning process include (Pegram et al., 2013):

- Developing a comprehensive understanding of the entire system
- Planning and taking action with imperfect information
- Prioritizing issues and adopting a phased and iterative approach to long-term goals
- Adapting to changing circumstances
- Addressing issues at the appropriate scale by nesting local plans under the basin plan
- Engaging stakeholders to strengthen institutional relationships

Watershed or river basin-scale planning is developed around four categories of priorities: protection, development, disaster risk, and institutional. These priorities are balanced to meet the needs of each watershed or river basin, allowing the planning process to be tailored to a region's specific characteristics. Implementing watershed or river basin planning in California will be challenging due to existing agency structures and legislative authorities; but the integrated regional watershed management process could be used as a building block.

There are multiple methods to define the assessment area, calculate the level of assessment, and determine how the assessment is collected. It could be an ad valorem assessment or based on a parcel basis. One approach would be to establish a watershed or river basin authority that could assess property within a specific watershed or river basin. This would require a majority vote of the State Legislature to create this new authority, along with a two-thirds supporting vote of parcel owners in the region. Watershed or river basin authorities could also be established by the Legislature at the State level. If established at a State level, the watershed or river basin assessment could vary by watershed or river basin, with all the funds collected at either the State or a regional level and distributed back to the watershed or river basin authorities. The funds would either be directly collected by, or distributed from the State, to the authority. It is anticipated that the majority of funds generated by this type of funding mechanism, as much as 85 to 90 percent, would go back to the river basins, with the remaining funds used to support statewide efforts (such as issues considered too expensive or outside the scope of a local agencies, such as climate change). Regardless of how the assessment is formulated, revenue would be primarily used to fund regional ongoing and capital management actions.

Nexus and Applicability

Nexus is a central tenet of a watershed or river basin assessment. This funding mechanism has a strong nexus across all water sectors for capital and ongoing management actions, if they are within the designated watershed or river basin. The applicability will vary across water sectors depending on the priorities and needs of the individual watershed or river basin. A watershed or river basin assessment also could provide a dedicated source of funding for ongoing management actions and multiagency or jurisdiction actions.

Inter-Annual Reliability

Once established, a watershed or river basin assessment would generate revenue and provide reliable expenditures on an annual basis for both capital and ongoing actions.

Political Viability

To create watershed or river basin assessments requires the support of local agencies and constituents, special districts, and the State government. Support will vary across watersheds or river basins depending on the funding gap, existing assessments and taxes, and voter opinion of additional funding for water resources management. The revenue generation, administrative costs, applicability, and control of funds are all factors that influence the political viability of a watershed or river basin assessment.

Water Surcharge Fee

A water surcharge fee on retail water sales could generate revenue for water resources management in California. Establishing a water surcharge fee requires legislation that stipulates the types of activities permitted under the fee. Various types of statewide water surcharge fees have been proposed and evaluated (Public Policy Institute of California[PPIC], 2014). Currently under debate in the State Legislature is the most recent proposal, Senate Bill (SB) 623. SB 623, the Safe and Affordable Drinking Water Fund, would generate revenue through a monthly fee on home water bills, as well as by implementing taxes on businesses and higher fees on agricultural producers and dairies (Murphy, 2017). SB 623 specifically would:

- Establish as a policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.
- Establish the Safe and Affordable Drinking Water Fund in the State Treasury and would provide that moneys in the fund are continuously appropriated.
- Authorize the State Water Resources Control Board (SWRCB) to provide for the deposit into the fund of federal contributions, voluntary contributions, gifts, grants, bequests, and settlements from parties responsible for contamination of drinking water supplies.
- Require the SWRCB to expend moneys in the fund for grants, loans, contracts, or services to assist eligible applicants.
- Impose, until July 1, 2020, a safe and affordable drinking water fee in specified amounts on each customer of a public water system, to be administered by the SWRCB, in consultation with the California Department of Tax and Fee Administration. Exempts customer that certifies and meets criteria relating to low-income households.
- Establish a fertilizer pollution damage fee of \$.005 per dollar of sale for all sales of fertilizing materials until January 1, 2033. After 2033, this fee would be reduced to \$.004.
- Establish a milk and dairy products fee of \$.01355 per 100 pounds (or hundredweight) of milk. After 2035, this fee would be reduced to \$.00678 per 100 pounds (or hundredweight) of milk.

The targeted approach in SB 623 is to address water supply reliability issues in communities or regions that do not have the capacity to support systems that provide reliable water with adequate water quality. Certain aspects of SB 623 are in response to groundwater contamination and draw on the nexus between pollution and polluters. Depending on the administration of SB 623, funds could also be used toward multi-benefit projects that have components relevant to other water sectors beyond water supply reliability.

Previously, a water surcharge fee was proposed in the State Legislature in 2006 and 2010 but failed to gain approval. As proposed in SB 1166 of 2006, the fund created by the fee would have:

- Established 11 regions based on CWP hydrologic regions, with some exceptions/additions
- Established a fee that would be collected from each retail water supplier in the state. The supplier would decide how to apportion the fee among its customers and would collect the fee.
- Provided a stable funding source for clean, reliable, and safe water supplies. The funds would have supported water management activities described in the *California Water Plan*. A significant amount of the funds would have paid for water quality improvements.
- Fifty percent of the funds collected in each region would be returned to those respective regions to plan and carry out integrated regional water management. Additional funds were reserved to match federal water quality grants, fund priority regional projects, and carry out emergency response to groundwater contamination. Through these programs, more than two-thirds of all funds collected would have been used to fund regional water management projects.
- A designated entity, such as a reconfigured California Water Commission, would have overseen distribution of funds and recommend changes or improvements to the fund and fee structure over time.
- Regions would have prepared integrated regional water management plans consistent with the *California Water Plan* to meet their local needs and fund their projects from their regional accounts.
- Remaining funds would have paid for programs of statewide significance, including funding for the public trust benefits of new surface water storage projects such as ecosystem restoration and flood control.

In 2010, State Senator Joe Simitian resurrected the approach with SB 34, which would have created the California Water Resources Investment Program and a California Water Resources Investment Fund. The fund would have used urban and agricultural water user fees to support:

- Planning and managing the statewide water system
- Broadening access to necessary water services
- Improving the ecosystem
- Managing water-related risks and major public emergencies
- Changing the water system to improve recreation opportunities

Funds received would have gone into a State investment account and 11 regional investment accounts. DWR would have been responsible for distributing these funds among the regions.

Nexus and Applicability

A statewide water use fee could fund a variety of projects, but has a better nexus with integrated water resource management. Implementation of a fee would require that benefits be defined and a nexus established to how the funds will be used.

Inter-Annual Reliability

Once established, a water surcharge fee would generate revenue and provide expenditures on an annual basis. The revenue generation potential of a water surcharge fee is dependent on the magnitude and the costs to administer the fee. Also, reliability could be variable based on how the fee is implemented. For example, if the fee is implemented on a per unit rate of water use, decreases in water use would reduce revenue.

Political Viability

Attempts to pass a water surcharge fee have failed in the past, but viability depends on how the fee is defined, as well as the perceptions of voters, the State legislature, and the State administration in the future.

Risk Reduction Insurance

The *California Water Plan Update 2018* includes risk reduction insurance as a new State insurance program for water-related natural disasters. Specific types of risk reduction insurance could cover losses from flooding, droughts, or other ecological events. Risk reduction insurance would not be used to replace existing federal or homeowner insurance policies. Instead this insurance would be used to augment existing insurance and provide funding for risk reduction efforts. Investing in risk mitigation is important because for every dollar spent on risk mitigation, there is a \$6 savings in future expenditures for disaster recovery. Savings increase for flood risk mitigation, increasing to \$7 per dollar spent (National Institute of Building Sciences Multi-Hazard Mitigation Council, 2017). The reinvestment of insurance premiums into risk-reducing management actions is considered a novel mechanism in the *California Water Plan Update 2018*. For example, a new statewide flood insurance program has been discussed in other DWR flood planning publications, including in *Central Valley Flood Protection Plan Investment Strategy, Appendix C: Funding Mechanisms* (DWR, 2017).

Nexus and Applicability

A risk reduction insurance program has high applicability and nexus to management actions that reduce the probability of events or damage from future water-related natural disasters.

Inter-Annual Reliability

Risk reduction insurance programs may vary in inter-annual reliability and are dependent on the administration of and subscription to the program. Nevertheless, baseline levels of funding could provide high inter-annual reliability to fund management actions that often go unfunded until a disaster occurs.

Political Viability

The political viability of a new risk reduction insurance program is dependent upon political support of shifting risk and potentially liability for disasters onto the State.

Water Markets

Water markets allow willing buyers and sellers to transfer the use of water through exchanges, one-time purchases, short-term leases, long-term leases, or permanent sale of water rights or contract quantities. Revenue could be generated from water markets by assessing a fee or per unit charge for each transfer, which could be used to support water resources management actions.

Nexus and Applicability

Water markets are most beneficial to the water supply reliability sector and ecosystem management water sector as these sectors have the biggest nexus. However, water markets could potentially be able to benefit additional water sectors, if a nexus is established. Private water transfers have a high nexus between the parties, while public purchase of water will need to have a nexus with statewide interests.

Inter-Annual Reliability

Water markets have a lower inter-annual reliability due to the dependence on the term of lease or sale, as well as the annual variation in hydrologic conditions and resulting supply and demand.

Political Viability

Certain water transfers are subject to environmental review, timing and capacity limitations, and conveyance losses. Changes to the regulatory environment surrounding water markets would require public and legislative support.

Enhanced Infrastructure Financing Districts (EIFD)

Legislation to establish Enhanced Infrastructure Finance Districts (EIFDs) was passed in 2014 with SB 628. The legislation authorized the creation of EIFDs to finance public capital facilities or other specified projects of community-wide significance. Cities or counties may establish EIFDs by adopting a resolution of intention that states the boundaries of the district, the type of public facilities and development proposed to be financed, the need for the district, and the goals the district proposes to achieve. EIFD funding is generated through incremental growth in property tax revenues, or tax increment, of taxing agencies (cities, counties, special districts, but not schools) that consent. Additionally, cities or counties may issue local bonds with a 55 percent vote of the electorate. Cities or counties may set the boundaries of the district to include multiple jurisdictions, matching a tributary or watershed. EIFDs can provide the local cost share in state and federal assistance programs.

As a funding mechanism, an EIFD may finance the purchase, construction, expansion, or rehabilitation of public infrastructure and private facilities, including:

- Flood management levees and dams, retention basins, and drainage channels
- Sewage treatment, water reclamation plans, and interceptor pipes
- Facilities for the collection and treatment of water for urban uses

An EIFD may not be used to finance routine maintenance, repair work, or the costs of an ongoing operation or providing services of any kind. Although tax increment would provide a dedicated source of funding, the amount of the funding may be small: Tax increment relies on new development for increased property tax revenues. Therefore, an EIFD may not be an appropriate financing mechanism for some areas not experiencing growth. In addition, only cities and counties are authorized to form an EIFD; however, because boundaries can include multiple jurisdictions, other agencies can contribute to the tax increment and receive funding for facilities.

Nexus and Applicability

A central tenet of EIFDs is the nexus between the revenue generation source and the benefits shared across the EIFD. The rules governing EIFDs will determine what types of capital management actions are applicable.

Inter-Annual Reliability

EIFDs revenue sources may be dependent on local, national, or global economic conditions but otherwise can provide annual funding for water resources management.

Political Viability

Political viability is dependent on the area in which the EIFD is being proposed and support from the public and local agencies within an area.

Greenhouse Gases (GHG) Cap and Trade Program Fund (Carbon Tax)

The GHG Cap and Trade Program is an existing state funding program. It is a market based program to reduce GHG emissions, using cap and trade, that includes an annually declining limit on GHG emissions established by Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006. This act established the goal of reducing Greenhouse Gas (GHG) emissions statewide to 1990 levels by 2020. Among other provisions, the legislation directed the Air Resources Board (ARB) to develop a plan to meet this 2020 goal. The legislation also authorized, though it did not require, the board to include, as part of its plan, a market-based mechanism to reduce California's GHG emissions. AB 32 defines a market-based mechanism as a system that includes an annually declining limit on GHG emissions, as well as a trading component whereby sources of GHG emissions may buy and sell carbon allowances to comply with the regulation. Such a system is commonly referred to as a cap and trade program.

The ARB cap and trade program went into effect in January 2013 and is designed to cap the aggregate amount of GHGs emitted by California's largest emissions sources that collectively represent roughly 80 percent of California's total GHG emissions (LAO, 2015). Entities that emit at least 25,000 metric tons or more of carbon dioxide equivalent per year are subject to the cap and trade regulation and are therefore considered to be a covered entity. Covered entities include oil producers, refineries, electricity generators, and other large industrial entities. Economic sectors responsible for the remaining 20 percent of GHG emissions, including agricultural and forestry businesses, are excluded from the cap and trade program.

Revenues generated from ARB's cap and trade auctions constitute mitigation fee revenues and are thus subject to the Sinclair Nexus Test (LAO, 2015). The Sinclair Nexus Test "requires that a clear nexus must exist between an activity for which a mitigation fee is used and the adverse effects related to the activity on which that fee is levied." Thus, the revenues from ARB's cap and trade auctions must be used only to

mitigate GHG emissions or harms caused by GHG emissions. This determination that ARB's cap and trade auction revenues are mitigation fees and not taxes is based on the fact that AB 32 was enacted by a majority of the State Legislature prior to the voter approval of Proposition 26¹.

Water resources manager must establish a nexus with GHG emissions reductions in order to access ARB cap and trade revenue for use in funding management actions. One possible way to establish this nexus would be to show the interdependence between water resources and ecosystem management actions, especially if multiple-benefit water management systems (e.g. floodplains) improve the ecosystem as well as the ability of plants to act as carbon sinks. In this case, a clear link between GHG emissions reductions and water resources management could be established.

Nexus and Applicability

Management actions across all water sectors are applicable, but a nexus must be established between the action and GHG emission reductions to utilize this funding mechanism.

Inter-Annual Reliability

The GHG Cap and Trade Program generates a reliable annual income stream to mitigate GHG emissions.

Political Viability

There is significant competition for these funds, and the nexus would have to be established for water resources management actions.

Public Private Partnerships (P3)

Public-private partnerships (P3s) are agreements between a private financial institution and State, local, or federal agencies. The private financial institution provides the public asset or service that is repaid, with interest, through a revenue source related to the investment. The private financial institution bears the risk and may have management responsibility. Water resources management P3 agreements that currently exist in California are primarily between local agencies and private financial institutions.

The *California Infrastructure Finance Act* (AB 2660 [1996; Aguiar]) allows P3s in the state for projects that are fee-producing and do not include State funds. In addition, the P3 contract length cannot exceed 35 years. Currently, State agencies are excluded from the act, so projects are limited to local agencies. Because the act does not allow the use of State funds, it blocks the use of State revolving funds on these projects.

¹ Proposition 26, or the Supermajority Vote to Pass New Taxes and Fees Act, requires a two-thirds supermajority vote in the State Legislature to pass many fees, levies, charges, and tax revenue allocations that under the state's previous rules could be enacted by a simple majority vote.

P3s offer two key benefits: an ability to capitalize on innovative technologies and an ability to capitalize on potential private cost efficiencies. Private water agencies operate to maximize the return to company owners and consequently have an incentive to employ and utilize innovative technologies. Private agencies are likely to focus on cost (and water) saving management strategies.

P3s could alternatively focus on increasing the availability of capital to private agencies. This may also encourage increased risk sharing. The State can borrow at a better rate than private agencies, and this will benefit private investment under P3s. One drawback is that this may create an incentive for riskier projects to be pursued, as companies will seek assistance in securing funds for projects with higher borrowing costs (typically riskier projects). Also, private financing rates are generally higher due to tax effects. Local bond financing options would typically be tax exempt for the bond holder and therefore have lower interest rates.

P3s can help the State use renting and leasing as a funding mechanism, which would make privately owned infrastructure available for public use. The State agency would rent or lease the facilities from the private entity. This arrangement is not commonly used in water infrastructure, but may be more common with additional P3s. Although there have been other legislative actions allowing for more specific uses of P3 for transportation projects (that expired in 2017), no other legislative changes have broadened the use of P3s for water projects.

In recent years, P3s have been more prevalent in financing public infrastructure because investors have become more interested in such construction as an alternative investment opportunity that can deliver relatively predictable, income-oriented, and inflation-protected returns. Investors have provided funds for existing infrastructure (through asset monetization) and for new construction. The revenue stream is the key factor as to whether a P3 is viable for infrastructure: if a revenue stream exists, whether from user fees, toll road fees, or elsewhere, an opportunity could exist for private funding (LAO, 2012). For a P3 to be successful for water resources management infrastructure, there would need to be a revenue stream, such as some form of a special assessment on property owners. The more stable the revenue stream, the more attractive the investment terms would be for investors.

Nexus and Applicability

P3 agreements are applicable to management actions in all water sectors that can qualify for a partnership with a private financial institution. In addition, public agencies must have a fiduciary responsibility or other bylaws that allow for a P3 agreement.

Inter-Annual Reliability

P3 agreements may be subject to external market forces, otherwise they are a reliable funding mechanism for water resources management in California.

Political Viability

The political viability of P3 agreements depends on ability for private and public agencies to agree on terms and changes to legislation to allow State agencies to use this funding mechanism.

User Fee or Public Goods Charge

A user fee or public goods charge is based on beneficiary pays principle. As described in a recent publication by Stanford University's Water in the West Institute, a volumetric surcharge generally achieves the same goal as GO bonds with respect to reliable revenue generation, but is possibly a more consistent and focused tool because of the direct relationship between water usage and the tax burden (Quesnal and Ajami, 2014). As a result, a fee or charge for water could be a less expensive and more equitable fundraising mechanism than statewide bonds. Some water utilities in California have already taken the initiative to collect a volumetric fee for public-purpose programs. One example is Metropolitan Water District of Southern California's (MWDSC) Water Stewardship rate, which "recovers the cost of MWDSC's financial commitment to conservation, water recycling, groundwater clean-up, and other local resource management programs" (MWDSC, 2015). However, few utilities finance public-purpose projects through a usage-based surcharge, and no water funding mechanisms parallel the electricity public good charge.

A use fee or public good charge could be levied at the State or local level to support public interests in water supply, ecosystem restoration and preservation, and integrated water management (IWM) projects. An example of a statewide user fee is the California Public Utility Commission fee. A new statewide fee for water management would be similar to the water surcharge fee, but with a stronger nexus under the beneficiary pays principle.

Nexus and Applicability

A user fee could be applicable to all water sectors with management actions that support public interests identified.

Inter-Annual Reliability

A user fee or public goods charge would provide a baseline level of funding each year for actions that provide public benefits identified.

Political Viability

The political viability of a user fee or public goods charge depends on the implementation of the fee (statewide or local), the level of the fee, and the proposed use of revenues. A new fee at the local level may be more politically viable than a statewide fee due to the ability to support a localized nexus rather than a statewide nexus. The implementation (statewide or local) and structure of the fee could require a majority vote of the beneficiary ratepayers or statewide taxpayers.

Summary of State Current and Novel Mechanisms

Several current mechanisms can be used to fund the recommended actions. The *California Water Plan Update 2018* also introduces several novel mechanisms that may work in combination with current mechanisms to provide a balanced approach to funding water management. The novel mechanisms would supplement, not replace, current funding mechanisms. Simply replacing current mechanisms with novel mechanisms would result in funding insufficient to implement the recommended actions. Each funding mechanism, whether current or novel, has a unique set of characteristics. These characteristics will be used to assess the feasibility and trade-offs of funding mixes, or scenarios for the *California Water Plan Update 2018*. Table 5 provides a summary list of the respective characteristics of existing and novel funding mechanisms. Historical annual expenditures from State agencies for water resources management are shown in Table 6.

Table 5 Comparison of Current and Novel Funding Mechanisms for State Investments

Funding Mechanism	Inter-Annual Reliability (High, Moderate, Low)	Capital and Ongoing Applicability (High, Moderate, Low)		Cost-Share Range (Minimum – Maximum)	Revenue Sources
		Capital	Ongoing		
Current Mechanisms					
General Fund	Moderate: dependent upon State budgeting	Low	High	20 to 100% for capital, data, tools, and planning actions Up to 100% for ongoing and policy actions	Income tax payers, corporate taxes, sales and use taxes, other State general fund revenue sources
GO Bond	Low	High	Low	20 to 100% for capital, data, tools, and planning actions N/A: O&M	Income tax payers, corporate taxes, sales and use taxes, other State general fund revenue sources
Greenhouse Gases (GHG) Cap-and-Trade Program Fund	Moderate: dependent upon market factors	Moderate: must result in GHG reduction	Moderate: must result in GHG reduction	Up to 80% of capital and planning actions that show nexus to GHG reductions	Qualified bidders in California's Cap-and-Trade Program
User Fees	High	Moderate: must be linked to benefit and dependent on how fee is established	Moderate: must be linked to benefit and dependent on how fee is established	Up to 80% of capital and planning actions related to benefit N/A: O&M and policy actions	Water use ratepayers (urban and/or agricultural)
Novel Mechanisms					
Watershed or River Basin Assessment	High	High	High	Up to 100% for State services and policy actions Up to 80% of infrastructure and planning actions N/A: O&M	Water use ratepayers (urban and/or agricultural), property owners, other identified beneficiaries
Water Surcharge Fee	Moderate: dependent upon resource usage	Moderate: dependent upon nexus to fee	Moderate: dependent upon nexus to fee	Up to 80% of capital, ongoing, and policy actions related to benefit	Water use ratepayers (urban and/or agricultural)
Risk Reduction Insurance	Moderate: dependent upon number of insurance policies	Moderate: dependent upon linkage to risk reduction actions	Moderate: dependent upon linkage to risk reduction actions	Up to 100% of risk reduction related capital, ongoing, and policy actions	Risk Reduction Insurance participants

	purchased				
Water Markets	Variable/Moderate: dependent upon market factors	Moderate: dependent upon nexus to resource benefit	Moderate: dependent upon nexus to resource benefit	Up to 80% of capital, ongoing, and policy actions	Water transfer participants (urban and/or agricultural agencies, individuals)
Enhanced Infrastructure Finance Districts (EIFD)	High	High	High	Dependent on EIFD establishment language; Up to 100% of capital and ongoing	Water use ratepayers (urban and/or agricultural), property owners, other identified beneficiaries
Public-Private Partnerships	High	High	Low	Up to 100 % with potential reductions from innovation and cost savings	Water use ratepayers (urban and/or agricultural)

Notes:

EIFD – Enhanced Infrastructure Finance Districts; GHG- greenhouse gases; O&M = operations and maintenance

Historically, different water management sectors have relied on different funding mechanisms.

Table 6 Historical Funding Levels of Current Funding Mechanisms
(Based on Average and Maximum Historical Expenditures 2006–2015^{a,b})

Funding Mechanism		Historical Annual Average (\$ millions)	Historical Annual Maximum (\$ millions)	2015 Actual Expenditures (\$ millions)
State	General Fund	\$264	\$466	\$279
	GO Bond	\$1,615	\$2,238	\$1,870
	Interest on GO Bond Debt ^b	\$491	\$695	\$668
	Designated Special Fund ^c	\$4,982	\$7,092	\$3,362

Notes:

GO = general obligation

^a Table columns and row totals may not sum correctly because of rounding.

^b Interest on water related general obligation bonds debt from the California Department of Finance (<http://www.ebudget.ca.gov/2015-16/pdf/GovernorsBudget/8000/9600.pdf>).

^c Designated special fund mechanism includes fees, assessments, taxes, and other revenue sources with a designated purpose.).

Local Funding Mechanisms

Local funding of water resources management occurs by cities, counties, and special districts. The local funding mechanisms support most of local ongoing water resources management actions and utilize State and federal assistance programs for larger capital management actions. Local revenue sources of assessments, fees, taxes, and rates support city, county, and special district expenditures on water resources management in California. Relevant water-related rates and assessments include water rates, benefits assessments, or assessment districts. Local taxes and fees include, but are not limited to, property taxes, sales taxes, developer fees, sewer fees, and storm water fees. Table 7 contains the local agencies expenditures included in the *California Water Plan Update 2018* funding analysis. Historical annual expenditures from local agencies for water resources management are:

- Historical Annual Average: \$27,823 million
- Historical Annual maximum: \$33,382 million

Table 7 Overview of Local Funding Mechanisms

Local Agencies	Expenditures	Revenue Sources
Cities	City expenditures on water, sewer, public safety, parks, stormwater, etc.	Assessments, bonds, fees, taxes, or rates
Counties	County expenditures on water, sewer, public safety, parks, stormwater, etc.	Assessments, bonds, fees, taxes, or rates
Special Districts	Water Districts, Levee and Reclamation Districts, etc.	Assessments, bonds, fees, taxes, or rates

Note: For historical expenditures on water resources management, see *Historical Expenditures and Current and Future Funding Needs* supporting document.

Nexus and Applicability

Certain revenue sources are dedicated to a specific management action, while some city and county revenue sources accrue to a general fund. If there is additional need for a service beyond what a city or county general fund can provide, a special district can form and administer a new revenue source to support the needed service. Applicability to water sector varies by local mechanism. For instance, water rates have high applicability to the water supply reliability sector. Generally, local funding mechanisms can be used for both capital and ongoing management actions. One exception is that local bonds are typically used to fund only capital management actions.

Inter-Annual Reliability

City and county expenditures from a general fund are in competition with other city and county services (public safety, transportation, education). General fund revenue sources are collected on an annual basis, but external economic conditions may cause annual levels to fluctuate. Water and sewer rates have a high inter-annual reliability, but also may fluctuate from external economic or hydrological conditions (e.g., water conservation may reduce revenue).

Most assessments or fees are dedicated for specific purposes so do not have to compete with other services for revenue. Assessment and fees, consistent with other local revenue sources can fluctuate from external conditions. For example, developer and connection fees can fluctuate based upon market conditions (e.g., during economic downturns housing construction typically slows).

Local bond funding is usually a dedicated source of funding for the specified management actions in the bond language. However, bonds do not have a high inter-annual reliability because the funds are for specific purposes and set at a specific expenditure level, usually expended over a limited timeframe. Also, bonds require voter approval for passage. For local agencies, GO bonds are typically used by cities and counties, as the bond can be backed by a local general fund or tax base, whereas revenue bonds are more commonly used by special districts.

Political Viability

Modifying local agency budgets to increase support for water resources management would require the support of voters, agency boards and staff, or the city or county administrations which may necessitate lobbying, letters of support, or other action by individual citizens. Increasing the capacity of local funding mechanism can be limited by voter-approved initiatives, such as *Proposition 13 of 1978* (limiting property tax increases) and *Proposition 218 of 1996* (requiring voter approval for new assessments).

Role in a Water Management Funding Plan

Each local funding mechanism identified in Table 7 supports water resources management in California through an annual general fund appropriation or specific revenue source. In the *California Water Plan Update 2018* funding analysis scenarios, the annual local funding levels in the recent past (2006-2015) are assumed to continue at either the annual average or historical maximum level for the next 50 years.

Federal Funding Mechanisms

Federal investment in water resources management in California occurs through agency budgets or through local assistance and grant programs. Federal agency involvement in California water resources

management is largely for regulatory or public benefit interests. Alternatively, federal investment can be funded through repayments by beneficiaries such as the United States Bureau of Reclamation's Central Valley Project. Table 8 contains the federal agency expenditures included in the *Funding Scenario Analysis* supporting document. Historical annual expenditures from federal agencies for water resources management are:

- Historical Annual Average: \$788 million
- Historical Annual maximum: \$1,074 million

Table 8 Overview of Federal Funding Mechanisms

Federal Agency	Relevant Water Sector	Local Assistance/Grants
US Department of Agriculture Natural Resources Conservation Service (NRCS) US Forest Service (USFS)	Water Quality, Ecosystem Management, People and Water	Financial Assistance and Easement Programs, grants programs
US Department of the Interior: US Bureau of Reclamation (Reclamation) US Bureau of Land Management (BLM) US Fish and Wildlife Service (USFWS) US Geological Survey (USGS) US National Park Service (NPS)	Water Supply Reliability, Water Quality, Ecosystem Management, People and Water	Water Use Efficiency grants, low-interest loans, provision of public information/data, endangered species grants programs, land and conservation fund.
US Department of Defense US Army Corps of Engineers (USACE)	Flood Management	Cost sharing on capital management actions
US Department of Homeland Security Federal Emergency Management Agency (FEMA)	Flood Management	Assistance with flood mapping, grants programs, relief
US Department of Commerce National Oceanic and Atmospheric Administration (NOAA)	Ecosystem Management	Grants and contracts
Independent Establishments and Government Corporations: US Environmental Protection Agency (USEPA) National Aeronautics and Space Administration (NASA) National Science Foundation (NSF) Corporation for National and Community Service (AmeriCorps)	Water Quality, Ecosystem Management, People and Water, Water Supply Reliability	Water Infrastructure Finance and Innovation Act (WIFIA) Loans, Clean Water State Revolving Funds, Research Grants, Provision of public information/data, Community Service

Note: For historical expenditures on water resources management, see *Historical Expenditures and Current and Future Funding Needs* supporting document.

Nexus and Applicability

Nexus is similar across federal funding mechanisms but vary in applicability. Most federal funding for water resources management in California will have a nexus with national interest or public benefits such as regulation, subsidies, or provision of public goods. Applicability varies across funding mechanisms and individual water sectors. For example, FEMA has strong applicability with the flood management sector but low applicability for other sectors. USACE has low applicability to ecosystem management

sector (due to the current benefit to cost ratio requirements); whereas, USFWS has high applicability to the ecosystem management sector. USACE and Reclamation funding has applicability across the water supply reliability and flood sectors as well as some applicability for the water quality, and people and water sectors.

Inter-Annual Reliability

Federal agency budgets vary in inter-annual reliability as they are dependent on the current administration and legislature. Also, the legislature may authorize but not fund individual management actions or programs in any given year. Nevertheless, historically there has been a baseline level of reliable funding for each federal agency. Local assistance and grants programs range from high to low inter-annual reliability.

Political Viability

Changes to a federal agency budget, local assistance or federal grants program requires the support of state representatives, state and local agencies, and the current federal administration, which may necessitate lobbying, letters of support, or other actions by local or state governments or individual citizens. In addition, depending on the current administration the priority for funding certain management actions varies.

Role in a Water Management Funding Plan

Each federal funding mechanism identified in Table 8 supports water resources management in California through fulfilling a mission statement supported by an annual agency budget or through local assistance programs. In the *California Water Plan Update 2018* funding analysis scenarios, the annual federal funding levels in the recent past (2006-2015) are assumed to continue at either the annual average or historical maximum level for the next 50 years.

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